REMARKS

The Office Action mailed August 30, 2006, has been reviewed and carefully considered. Claims 7, 18, 29 and 40 have been amended. Claims 1-46 are pending in the application.

In paragraph 2, on page 2 of the Office Action, claims 7, 18, 29 and 40 were objected to because of informalities.

Applicants respectfully traverse the objection to the claims, but in the interest of expediting prosecution have amended the claims to overcome the objections as suggested.

In paragraph 3 on page 2 of the Office Action, claims 1, 2, 4, 6, 12, 13, 15, 17, 23, 24, 26, 28, 34, 35, 37, 39, 45 and 46 were rejected under 35 U.S.C. § 102(b) as being anticipated by Dolivo.

In paragraph 5 on page 4 of the Office Action, claims 3, 5, 7-11, 14, 16, 18-22, 25, 27, 29-33, 36, 38 and 40-44 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant respectfully traverses the rejections

To anticipate a claim, the reference must teach every element of the claim. . Applicant respectfully submits that the cited reference fails to teach each and every element of the claims.

Dolivo discloses a cosine equalizer. The cosine equalizer response consists of unity gain at low frequencies, a cosine function in the middle, and attenuation at thigh frequencies. The coefficient taps of the of the cosine equalizer are adjusted using an algorithms, e.g., Least Means Squares algorithm, Recursive Least Squares algorithm, Kalman algorithm, etc.

According to Dolivo, the taps of the equalizer are modified according to an algorithm derived from the fast recursive least squares algorithm as described by Falconer et al. (See, section 3, column 4, line 25 to column 5, line 35). The algorithm disclosed by Dolivo

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approximates a tap gradient for calculating the tap coefficients to avoid multiplication steps. The tap gradient that is approximated for calculating the tap coefficients is based on the stochastic gradient of the mean square error $E[e_n^2(K_n)]$ with respect to tap coefficient K_n.

Thus, according to Dolivo, the taps are updated using an algorithm based upon the fast recursive least squares algorithm rathern than a cosine function as recited in the independent clais of the present invention.

Accordingly, Dolivo fails to teach, disclose or suggest a coefficient learning circuit that adaptively updates coefficients for the equalizer based upon a cosine function. Therefore, claim 1 is patentable over Dolivo. Independent claims 12, 23, 34, 45 and 46 recite similar limitations and are patentable over Dolivo for similar reasons.
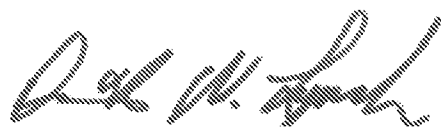
Dependent claims 2-11, 13-22, 24-33 and 35-44 are also patentable over the references, because they incorporate all of the limitations of the corresponding independent claims 1, 12, 23 and 34, respectively. Further dependent claims 2-11, 13-22, 24-33 and 35-44 recite additional novel elements and limitations. Applicants reserve the right to argue independently the patentability of these additional novel aspects. Therefore, Applicants respectfully submit that dependent claims 2-11, 13-22, 24-33 and 35-44 are patentable over the cited references.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

If a telephone conference would be helpful in resolving any issues concerning this

communication, please contact Attorney for Applicant, David W. Lynch, at 423-757-0264.

Respectfully submitted,

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